

**Final
Site-Specific Safety and Health Plan Attachment
Site Investigation at Station No. 6,
Subsection of Former Toxic Gas Area
Pelham Range, Parcel 211(7)
Fort McClellan
Calhoun County, Alabama**

**Prepared for:
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**Prepared by:

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**Task Order CK05
Contract No. DACA21-96-D-0018
IT Project No. 774645**

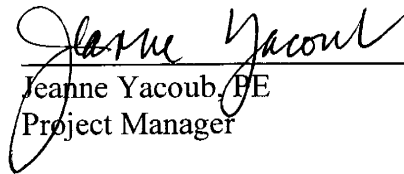
December 2001

Revision 0

This Site-Specific Safety and Health Plan must be used in conjunction with the Installation-Wide Safety and Health Plan, Fort McClellan, Alabama.

Final
Site-Specific Safety and Health Plan Attachment Approval
Fort McClellan, Calhoun County, Alabama

I have read and approve this site-specific safety and health plan attachment for Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7), Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation procedures.

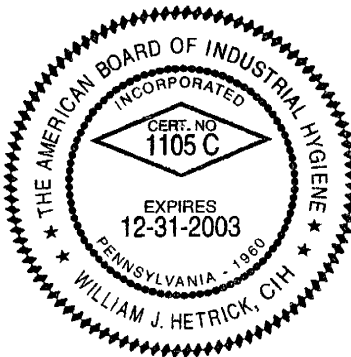


Jeanne Yacoub, PE
Project Manager

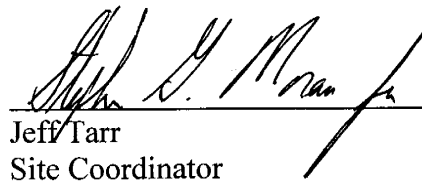
12/11/01
Date



William J. Hetrick
Health & Safety Manager



12/11/01
Date

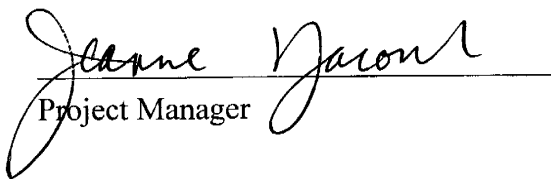


Jeff Tarr
Site Coordinator

12/11/01
Date

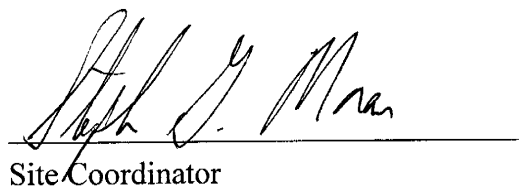
Acknowledgements

The approved version of this site-specific safety and health plan (SSHP) attachment for Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7), Fort McClellan, Calhoun County, Alabama, has been provided to the site coordinator. I acknowledge my responsibility to provide the site coordinator with the equipment, materials, and qualified personnel to implement fully all safety requirements in this SSHP attachment. I will formally review this plan with the health and safety staff every 6 months until project completion.


Project Manager

12/11/01
Date

I acknowledge receipt of this SSHP attachment from the project manager, and that it is my responsibility to explain its contents to all site personnel and cause these requirements to be fully implemented. Any change in conditions, scope of work, or other change that might affect worker safety requires me to notify the project manager and the health and safety manager.


Site Coordinator

12/11/01
Date

Site-Specific Safety and Health Plan Acknowledgement Form

I have been informed of, and will abide by, the procedures set forth in this site-specific safety and health plan attachment for work activities at Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7), Fort McClellan, Calhoun County, Alabama.

Printed Name

Signature

Representing

DateThis image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Fort McClellan Gate Hours

| | |
|---------------|---|
| Baltzell Gate | Baltzell Road. Open 24 hours daily, 7 days a week. |
| Galloway Gate | Galloway Road. Open 6 am to 6 pm Monday through Friday |

Pelham Range Access Requirements

| | |
|--------------|---|
| Pelham Range | IT personnel will contact the Range Control Office each day access is required to receive an access permit and available areas of entry. See Attachment 1 for Range Control contact for Pelham Range. |
|--------------|---|

Fort McClellan Project Emergency Contacts

| | |
|--|--|
| Range Control Office (Main Post)..... | (256) 848-6772 |
| Fire Department (off post) | 911 |
| Ambulance (off post) | 911 |
| Regional Medical Center | (256) 235-5121 |
| Military Police (SSG Busch) | (256) 848-5680, 848-4824 |
| DOD Guard Force (Mr. Bolton) | (256) 848-5680, 848-4732 |
| Anniston Police Department | (256) 238-1800 |
| Chemical Agent Emergencies..... | (256) 895-1598 |
| (Mike Smith, CEHNC) | cell phone (256) 759-3931 |
| UXO Emergencies | (256) 895-1598 |
| (Mike Smith, CEHNC) | cell phone (256) 759-3931 |
| UXO Nonemergencies/Reporting Only (Ronald Levy) | (256) 848-6853 |
| Baltzell Gate Guard Shack..... | (256) 848-5693, 848-3821 |
| National Response Center & Terrorist Hotline..... | (800) 424-8802 |
| Poison Control Center..... | (800) 462-0800 |
| EPA Region IV | (404) 562-8725 |
| Ronald Levy, BRAC Environmental Coordinator, FTMC Transition Force | (256) 848-6853 |
| Lisa Kingsbury, FTMC Transition Force | (256) 848-7455 |
| Ellis Pope, U.S. Army Corps of Engineers, Mobile District | (251) 690-3077 |
| Phillip Stroud, Alabama Department of Environmental Management | (334) 270-5646 |
| Doyle Brittain, EPA Region IV | (404) 562-8259 |
| Ross McCollum, U.S. Army Corps of Engineers, Mobile District..... | (251) 690-3113 |
| Mike Moore, Fort McClellan Safety Office | (256) 848-5433 |
| Darryl Stabile, U.S. Army Corps of Engineers..... | (251) 690-2784 |
| Jeanne Yacoub, IT Project Manager..... | (770) 663-1429 |
| Jeff Tarr, IT Site Manager | (256) 848-3482, -3499 |
| Bill Hetrick, IT H&S Manager | (865) 690-3211, and pager (888) 655-9529 |
| Dr. Jerry H. Berke, Health Resources Occupational Physician..... | (800) 350-4511 |

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List of Acronyms

See Attachment 1, List of Abbreviations and Acronyms, of the site-specific Field Sampling Plan Attachment contained in this binder.

1.0 Site Work Plan Summary

Project Objective. The objective of this site investigation at Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7), Fort McClellan (FTMC), Calhoun County, Alabama, is to install five permanent residuum groundwater monitoring wells, collect five surface soil samples, five subsurface soil samples, five groundwater samples, and two depositional soil samples. These samples will be collected to determine whether potential site-specific chemicals (PSSC) are present and provide data for further characterization of the site to determine the environmental conditions and determine if any further action is to be conducted at the site. Additionally, samples will be collected from environmental media in locations that will assist in the assessment of potential ecological impacts resulting from previous activities at the site.

Project Tasks

- Access area survey for surface and downhole unexploded ordnance (UXO) avoidance
- Utility clearances
- Surface and subsurface soil sampling
- Installation of monitoring wells
- Groundwater sampling
- Surveying.

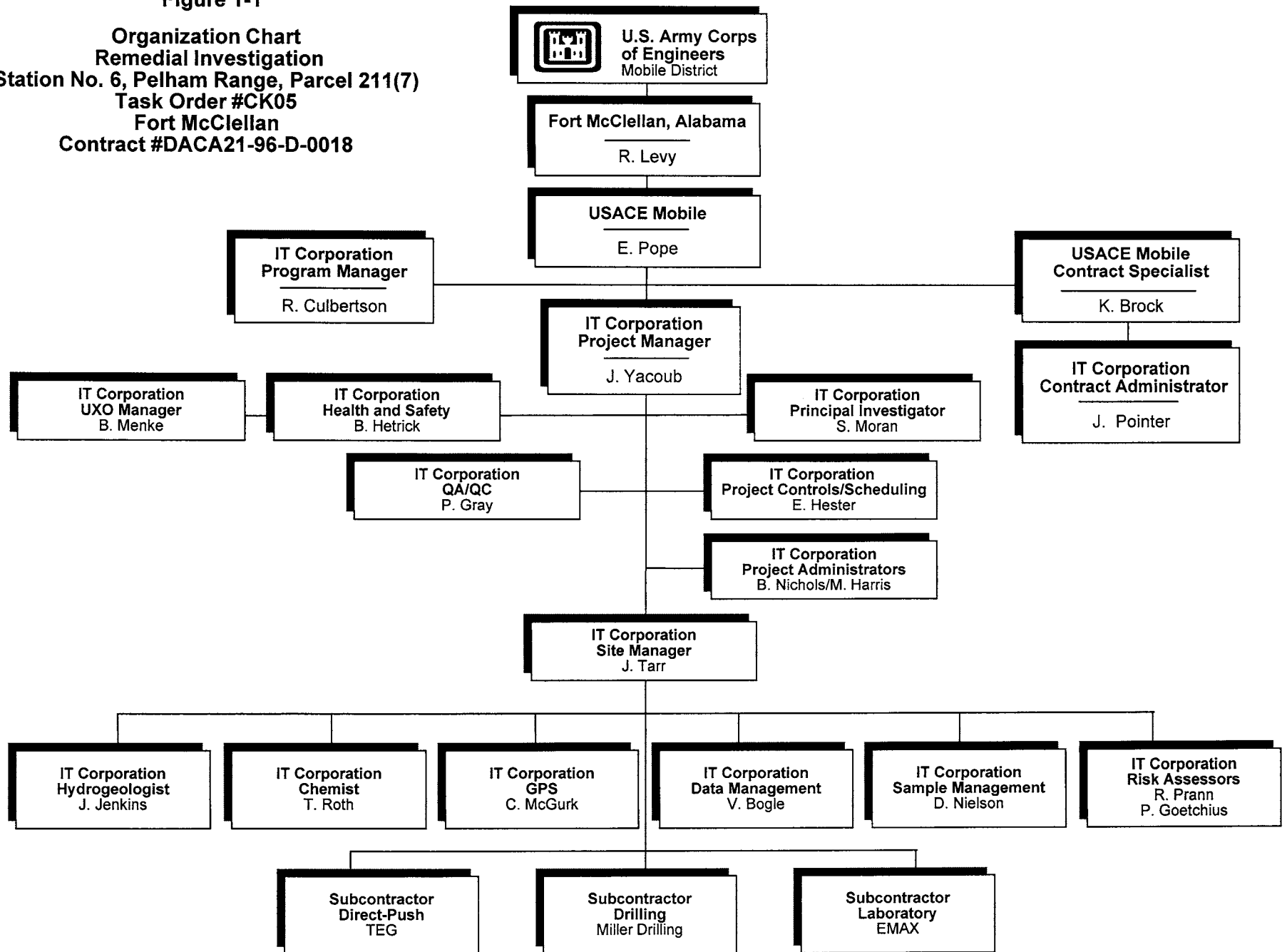
Personnel Requirements. Up to 15 employees are anticipated for this scope of work. See Figure 1-1 for an organization chart.

Note: All personnel on this site shall have received training, informational programs, and medical surveillance as outlined in the installation-wide safety and health plan (SHP) for site investigations at FTMC, and be familiar with the requirements of this site-specific safety and health plan (SSHP).

This SSHP must be used in conjunction with the installation-wide SHP and the ordnance and explosives (OE) management plan, Appendix E of the installation-wide sampling and analysis plan.

Figure 1-1

**Organization Chart
Remedial Investigation
Station No. 6, Pelham Range, Parcel 211(7)
Task Order #CK05
Fort McClellan
Contract #DACA21-96-D-0018**



2.0 Site Characterization and Analysis

2.1 Anticipated Hazards

The activity hazard analysis in Chapter 5.0 contains project-specific practices utilized to reduce or eliminate anticipated site hazards. The activity hazard analysis indicates specific chemical and physical hazards that may be present and encountered during each task from on-site operations. Below each task is a list of hazards and specific actions that will be taken to control the respective hazards. These control measures may include work practice controls, engineering controls, and/or use of appropriate personal protective equipment (PPE). Site control with the use of specific work zones (support zone, contamination reduction zone, and exclusion zone) is addressed in Chapter 7.0 of Appendix A of the IT Corporation (IT), August 2000, *Final Installation-Wide Sampling and Analysis Plan, Fort McClellan, Calhoun County, Alabama*.

Station No. 6 is a subsection of the Former Toxic Gas Area, Parcel 211(7), at Pelham Range. Station No. 6 was one of seven training stations in a former training area, the Chemical Obstacle Course. The Chemical Obstacle Course is documented as being located in the northwest portion of Training Area 10B at Pelham Range, falling within the parcel boundary of the Former Toxic Gas Area, Parcel 211(7). A 1955 Chemical Corps School Lesson Plan outlines a description and a figure of the Chemical Obstacle Course. The Chemical Obstacle Course was used from approximately 1955-1963.

Station No. 6 is described in the Lesson Plan as a training area for mines containing molasses residue to simulate the encounter of mines containing chemical warfare agents. Another chemical warfare agent contamination scenario included surface soil contamination by placing the chemical agent mustard on the ground to present a hazard for trainees to detect. The Lesson Plan also describes a shuffle box or pit containing dry mix located at the far edge of the area for the decontamination of shoes.

A survey conducted by the U.S. Army Chemical School in 1967 declared the Chemical Obstacle Course area free of contamination. All empty rounds, containers, and miscellaneous items were policed and disposed of in accordance with standard operating procedures (not specified). The area was bulldozed and decontaminated. Based on existing information, the report concluded there appeared to be no significant risk or surface activity.

The locations of Station No. 6 and the Chemical Obstacle course were unknown when the 1967 Army survey was performed and the area was declared free of contamination. It is believed that the shuffle box or pit of an unknown decontaminant was bulldozed. Therefore, the potential for chemical warfare materiel (CWM) is present at this area of investigation. Attachment 1,

Evaluating OE/UXO/CWM Hazards in Support of Hazardous, Toxic, or Radioactive Waste (HTRW) Activities, confirms that the historical records available for this site have been reviewed and that UXO support is required for all site activities. Additionally, based on all available information, it is anticipated that the potential for chemical warfare agents is moderate and may be present at the Station No. 6 area of investigation. Air monitoring for CWM using a Miniature Continuous Air Monitor System (MINICAMS) will be performed by Huntsville (Alabama) Corps of Engineers Technical Escort Unit for all intrusive investigations at Station No. 6, and the procedures contained in the site-specific UXO safety plan shall be followed for all site activities associated with this investigation.

Table 2-1 contains the toxicological properties of chemicals anticipated or to be used at Station No. 6, Subsection of the Former Toxic Gas Area, Parcel 211(7), Fort McClellan, Calhoun County, Alabama.

2.2 General Site Information

Location of Site. FTMC is located in the foothills of the Appalachian Mountains of northeastern Alabama near the cities of Anniston and Weaver in Calhoun County. FTMC is approximately 60 miles northeast of Birmingham, 75 miles northwest of Auburn, and 95 miles west of Atlanta, Georgia. FTMC consists of three main areas of government-owned and leased properties: the Main Post, Pelham Range, and Choccolocco Corridor (lease terminated in May 1998). Station No. 6 is a subsection of the Former Toxic Gas Area, Parcel 211(7), at Pelham Range. Station No. 6 was one of seven training stations in a former training area, the Chemical Obstacle Course. The Chemical Obstacle Course is documented as being located in the northwest portion of Training Area 10B at Pelham Range, falling within the parcel boundary of Former Toxic Gas Area, Parcel 211(7).

Duration of Planned Employee Activity. Employee activity duration is anticipated to be less than two months.

Site Topography and Size. Station No. 6, Subsection of Former Toxic Gas Area, is approximately 500 feet long (east to west) by 400 feet wide (north to south), and covers 4.6 acres. Station No. 6 is positioned in a low-lying area approximately 570 feet in elevation; the highest elevation at the site is 590 feet.

Pathways for Hazardous Substance Dispersion. Possible pathways for hazardous substances in the area are soils and groundwater.

Table 2-1

**Toxicological and Physical Properties of Chemicals
Station No. 6, Subsection of Former Toxic Gas Area, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 3)

| Substance [CAS] | IP ^a (eV) | Odor Threshold (ppm) | Route ^b | Symptoms of Exposure | Treatment | TWA ^c | STEL ^d | Source ^e | IDLH (NIOSH) ^f |
|---|-------------------------|----------------------------|--------------------|--|---|---|--------------------|---------------------|------------------------------|
| Bleach (Sodium hypochlorite, aqueous solution) [7681-52-9] | | | Ing Inh | Bronchial irritation, coughing, difficulty breathing, nausea, pulmonary edema; irritation of mucous membranes, eyes, and skin; eczema | Eye: Irrigate immediately Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention | None | None | N/A | N/A |
| Fuel oil (diesel oil, medium) | N/A | N/A | Ing Inh Con | Ingestion causes nausea, vomiting, and cramps; depressed central nervous system, headache, coma, death; pulmonary irritation; kidney and liver damage; aspiration causes severe lung irritation, coughing, gagging, dyspnea, sub- sternal stress, pulmonary edema; bronchopneumonia; excited, then depressed, central nervous system. | Eye: Irrigate promptly Skin: Soap wash Breath: Respiratory support Swallow: Immediate medical attention Aspiration: Immediate medical attention | N/A Avoid skin contact | N/A | PEL TLV REL | |
| Gasoline [8006-61-9] | ? | 0.3 | Inh Ing Con | Intoxication, headaches, blurred vision, dizziness, nausea; eye, nose throat irritation; potential kidney and other cancers. Car- cinogenic. | Eye: Irrigate immediately (15 min) Skin: Soap wash promptly Breath: Respiratory support Swallow: Immediate medical attention | 300 ppm 300 ppm Ca, lowest feasible conc. (LOQ 15 ppm) | 500 ppm 500 ppm | PEL TLV REL | ? |
| n-Hexane [110-54-3] | 10.18 | 65-248 | Inh Ing Con | Lightheadedness; nausea, headache; numbness of the extremities, muscular weakness; irritation of the eyes and nose; dermatitis; chemical pneumonia; giddiness. | Eye: Irrigate immediately Skin: Soap wash immediately Breath: Respiratory support Swallow: Immediate medical attention | 500 ppm 50 ppm 50 ppm | | PEL TLV REL | 1,100 ppm (10% of LEL) |
| Isopropyl alcohol (isopropanol) [67-63-0] | 10.16 | 43-200 | Inh Ing Con | Mild irritation of the eyes, nose, and throat; drowsiness, dizziness, head- ache; dry, cracked skin. | Eye: Irrigate immediately Skin: Water flush Breath: Respiratory support Swallow: Immediate medical attention | 400 ppm 400 ppm 400 ppm | 500 ppm 500 ppm | PEL TLV REL | 2,000 ppm |

Table 2-1

**Toxicological and Physical Properties of Chemicals
Station No. 6, Subsection of Former Toxic Gas Area, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 3)

| Substance [CAS] | IP ^a (eV) | Odor Threshold (ppm) | Route ^b | Symptoms of Exposure | Treatment | TWA ^c | STEL ^d | Source ^e | IDLH (NIOSH) ^f |
|---|-------------------------|----------------------------|--------------------|---|--|---|--|---------------------|------------------------------|
| Mustard gas | ? | 0.0006 mg/m ³ | Abs Inh | Garlic-like odor. Eye and respiratory tract irritation; redness of skin and blisters develop 4 to 24 hours after exposure; hoarseness, sore throat, coughing, pulmonary edema | Treat like a thermal burn. Do not break blisters. Eye: Irrigate immediately. Transfer to medical facility Skin: Remove victim from area immediately. Flush skin and clothes with bleach within 1 minute. Cut and remove contaminated clothing, then wash skin again with bleach and then with soap and water. Transfer to medical facility. Breath: Remove from area immediately. Transfer to medical facility. | | C0.003 mg/m ³ | AEL | 0.5 mg/m ³ Ca |
| Methyl chloride (chloromethane) [74-87-3] | 11.28 | >10 | Inh Con | Dizziness, nausea, vomiting; visual disturbances, stagger, slurred speech, convulsions; liver and kidney damage reproductive and teratogenic defects | Eye: Irrigate immediately Skin: Water flush promptly Breath: Fresh air Swallow: Immediate medical attention | 100 ppm 50 ppm - skin lowest feasible | C 200 ppm 100 ppm - skin -- | PEL TLV REL | Ca (2,000 ppm) |
| Nitric acid [7697-37-2] | 11.95 | 0.3-1 | Inh Ing Con | Irritated eyes, mucous membranes, and skin; delayed pulmonary edema, pneumonitis, bronchitis; dental erosion. | Eye: Irrigate immediately Skin: Water flush promptly Breath: Respiratory support Swallow: Immediate medical attention | 2 ppm 2 ppm 2 ppm | 4 ppm 4 ppm | PEL TLV REL | 25 ppm |
| Sodium hydroxide [1310-73-2] | NA | NA | Inh Ing Con | Irritated nose; pneumonitis; burns eyes, and skin; temporary loss of hair. | Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention | 2 mg/m ³ | C2 mg/m ³ C2 mg/m ³ | PEL TLV REL | 10 mg/m ³ |
| Sulfuric acid [7664-93-9] | ? | 0.15 | Inh Ing Con | Irritated eyes, nose, and throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatitis; dental erosion; tracheobronchitis; skin and eye burns; dermatitis. | Eye: Irrigate immediately Skin: Water flush immediately Breath: Respiratory support Swallow: Immediate medical attention | 1 mg/m ³ 1 mg/m ³ 1 mg/m ³ | 3 mg/m ³ | PEL TLV REL | 15 mg/m ³ |

Table 2-1

Toxicological and Physical Properties of Chemicals Station No. 6, Subsection of Former Toxic Gas Area, Parcel 211(7) Fort McClellan, Calhoun County, Alabama

(Page 3 of 3)

*IP = Ionization potential (electron volts).

*Route = Inh, Inhalation; Abs, Skin absorption; Ing, Ingestion; Con, Skin and/or eye contact.

*TWA = Time-weighted average. The TWA concentration for a normal work day (usually 8 or 10 hours) and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day without adverse effect.

*STEL = Short-term exposure limit. A 15-minute TWA exposure that should not be exceeded at any time during a workday, even if the TWA is not exceeded.

*PEL = Occupational Safety and Health Administration (OSHA) permissible exposure limit (29 CFR 1910.1000, Table Z).

AEL = Airborne Exposure Limit.

TLV = American Conference of Governmental Industrial Hygiene (ACGIH) threshold limit value—TWA.

REL = National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit.

*IDLH (NIOSH)—Immediately dangerous to life or health (NIOSH). Represents the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.

NE = No evidence could be found for the existence of an IDLH (NIOSH Pocket Guide to Chemical Hazards, Pub. No. 94-140, June 1997).

C = Ceiling limit value which should not be exceeded at any time.

Ca = Carcinogen.

NA = Not applicable.

? = Unknown.

LEL = Lower explosive limits.

LC₅₀ = Lethal concentration for 50 percent of population tested.

LD₅₀ = Lethal dose for 50 percent of population tested.

NIC = Notice of intended change (ACGIH).

3.0 Personal Protective Equipment

The work activities will begin in the following levels of protection. Also, a completed description of Level D, Modified Level D, and Level C personal protective equipment (PPE) is provided.

| Task | Initial Level of PPE |
|---|----------------------|
| Initial UXO avoidance sweep and equipment staging | Level D |
| Utility clearance | Level D |
| Subsurface soil and groundwater sampling | Modified Level D* |
| Monitoring well installation | Modified Level D* |
| Surveying | Level D |

*Initial level will be raised to Level C or higher if air monitoring results in the workers' breathing zone are greater than action levels.

Note: If mustard gas is encountered, a garlic-like odor will be detected. Workers must don escape/egress air supply packs and evacuate the site immediately if garlic odor or any other odor is encountered until results from real-time chemical agent monitoring can verify contaminant present.

Level D. The minimal level of protection that will be required of IT personnel at the site will be Level D. The following equipment will be used for Level D protection:

- Coveralls or work clothing
- Leather work gloves (when necessary)
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment).

Modified Level D. The following equipment will be used for Level D-Modified protection:

- Permeable Tyvek, Kleenguard, or its equivalent
- Latex boot covers
- Nitrile, heavy work, or latex gloves
- Steel-toed safety boots
- Safety glasses
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment)
- Escape/egress air supply pack (required for suspected chemical agent sites).

Note: In addition to Modified Level D PPE, the operator of high-pressure water jetting equipment shall wear metatarsal guards for protection of the legs and feet and a face shield for protection from splashes.

Level C. Level C protection will not be used unless air-monitoring data indicate the need for upgrade; however, the equipment shall be readily available on site. The following equipment will be used for Level C protection:

- National Institute of Occupational Safety and Health/Mine Safety and Health Administration-approved full-face, air-purifying respirators equipped with organic vapor/acid gas cartridge in combination with high-efficiency particulate air filter
- Hooded, Saran-coated Tyvek, taped at gloves, boots, and respirator
- Nitrile gloves (outer)
- Latex or lightweight nitrile gloves (inner)
- Neoprene steel-toed boots or polyvinyl chloride overbooties/steel-toed safety boots
- Hardhat
- Hearing protection (when working near/adjacent to operating equipment)
- Escape/egress air supply pack (required for suspect chemical agent sites).

Note: In addition to Level C PPE, the operator of high-pressure water jetting equipment shall wear metatarsal guards for protection of the legs and feet and a face shield for protection from splashes.

4.0 Site Monitoring

The environmental contaminants of concern resulting from activities at Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7), are most likely degradation products from mustard agent (thiodiclycol), decontamination agents (non-corrosive) (DANC), decontamination solution number 2 (DS2), and supertropical bleach (STB).

Table 4-1 contains action levels for site monitoring at Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7).

Chemical. The site safety and health officer or task geologist shall perform conventional chemical air monitoring during the performance of site activities and ground-intrusive operations. A calibrated photo ionization detector (e.g., HNu DL-101 or equivalent) organic vapor analyzer will be utilized to monitor the sampling locations and breathing zones (BZ) to determine if any organic material may be present that would necessitate upgrading of the protection level. A calibrated combustible gas/oxygen indicator will be utilized to monitor the borehole, work areas and BZs to determine if any combustible/flammable levels may be present that would necessitate evacuation of the work area.

Chemical Warfare Agent. A Huntsville Corps of Engineers Technical Escort Unit chemical agent specialist will provide on-site detection using the Real-Time Analytical Platform (RTAP) MINICAMS and/or DAAMS tubes to ensure safety of personnel during performance of intrusive investigations.

Unexploded Ordnance. UXO support for sampling activities is specified in the site-specific UXO safety plan developed for Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7). The UXO specialists will perform UXO avoidance sweeps prior to moving heavy equipment onto the site. During this operation, UXO on or near the surface will be detected and marked for avoidance during field operations. Additionally, downhole magnetometer surveys will be performed to detect metal objects in the path of sampling equipment or boring apparatus. The sampling/boring location will be moved to avoid subsurface metal objects. The practice of UXO avoidance shall be implemented for all intrusive activities associated with well construction and completion and soil sampling.

If UXO is encountered, personnel will contact the site manager and UXO specialist immediately. Personnel will evacuate the immediate area and secure it.

Table 4-1

Action Levels
Station No. 6, Subsection of Former Toxic Gas Area-Pelham Range
Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

When in Level C PPE

| Analyte | Action Level | Required Action ^a |
|-------------------------------|--|-------------------------------|
| Volatile organic hydrocarbons | ≥ 25 ppm above background in breathing zone (BZ) | Stop work, evacuate work area |

When in Level D Modified/D PPE

| Analyte | Action Level | Required Action ^b |
|-------------------------------|--------------------------------|---|
| Volatile organic hydrocarbons | ≥ 5 ppm above background in BZ | Stop activities, suspend work activities for 15 to 30 minutes, if readings are sustained then upgrade to Level C PPE. |

NOTE: Huntsville Corps of Engineers Technical Escort Unit will conduct environmental monitoring for chemical agents. If chemical agents are encountered, if "ring off" occurs, or if airborne concentrations of mustard gas approach ceiling limit of 0.003, milligrams per cubic meter (mg/m³), site personnel will don escape/egress air supply pack and evacuate the site immediately. Employees will decontaminate using bleach solution. If confirmation of chemical agent monitoring determines the presence of chemical agents, contact the Fire Department for additional decon. The SSHO must follow notification procedures in Section 11 of the Installation-Wide Safety and Health Plan. Also, contact the H&S manager, project manager, and the Mobile District USACE.

When in Support Zone

| Analyte | Action Level | Required Action |
|-------------------------------|--------------------------------|---|
| Volatile organic hydrocarbons | ≥ 1 ppm above background in BZ | Evacuate support zone and re-establish perimeter of EZ. |

^aFour instantaneous peaks in any 15-minute period or a sustained reading for 5 minutes in excess of the action level will trigger a response.

^bContact with the H&S manager must be made prior to continuance of work. The H&S manager may then initiate perimeter/integrated air sampling along with additional engineering controls.

No one is permitted to downgrade levels of PPE without authorization from the H&S manager.

5.0 Activity Hazard Analysis

The attached activity hazard analysis (Table 5-1) is provided for the following activities:

- Initial UXO avoidance sweep and equipment staging
- Surveying
- Drilling and installation of monitoring wells
- Groundwater sampling
- Soil boring and surface/subsurface sampling
- Moving and shipping collected samples
- Material storage
- Disposal of investigative derived waste
- High pressure water jetting operations.

All injuries and illnesses must be immediately reported to the site manager or the site safety and health officer, who will then notify off-site personnel and organizations as necessary.

If hospital care must be provided, the victim shall be treated at Northeast Regional Medical Center. Directions to the hospital are provided in Figure 5-1.

Table 5-1

Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

(Page 1 of 14)

| Activity | Potential Hazards | Recommended Controls |
|---|---------------------------------|--|
| Initial UXO avoidance sweep and equipment staging | Slip, trip, and fall hazards | <ul style="list-style-type: none">• Determine best access route before transporting equipment.• Practice good housekeeping; keep work area picked up and clean as feasible.• Continually inspect the work area for slip, trip, and fall hazards.• Look before you step; ensure safe and secure footing. |
| | Heavy lifting | <ul style="list-style-type: none">• Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment. |
| | Falling objects | <ul style="list-style-type: none">• Stay alert and clear of materials suspended overhead; wear hard hat and steel-toed boots. |
| | Flying debris, dirt, dust, etc. | <ul style="list-style-type: none">• Wear safety glasses/goggles; ensure that eye wash is in proper working condition. |
| | Pinch points | <ul style="list-style-type: none">• Keep hands, fingers, and feet clear of moving/suspended materials and equipment.• Beware of contact points.• Stay alert at all times! |
| | Cuts/bruises | <ul style="list-style-type: none">• Use cotton or leather work gloves for material handling. |
| | Bees, spiders, and snakes | <ul style="list-style-type: none">• Inspect work area carefully and avoid placing hands and feet into concealed areas. |
| | Ticks | <ul style="list-style-type: none">• Wear light colored clothing (can see ticks better).• Mow vegetated and small brush areas.• Wear insect repellent.• Wear long sleeves and long pants.• Visually check oneself promptly and frequently after exiting the work area. |
| | Fire | <ul style="list-style-type: none">• Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition. |
| | Hazard communication | <ul style="list-style-type: none">• Label all containers as to contents and dispose of properly.• Ensure Material Safety Data Sheets (MSDS) are available for hazardous chemicals used on site. |

Table 5-1

Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

(Page 2 of 14)

| Activity | Potential Hazards | Recommended Controls |
|---|----------------------|---|
| Initial UXO avoidance sweep and equipment staging (continued) | Noise | <ul style="list-style-type: none"> Sound levels above 85 decibels (dBA) mandates hearing protection. |
| | Lighting | <ul style="list-style-type: none"> Adequate lighting will be provided to ensure a safe working environment. |
| | Cold stress | <ul style="list-style-type: none"> Workers should wear insulated clothing when temperatures drop below 40 degrees Fahrenheit (°F). Drink warm beverages on breaks. Refrain from drinking caffeinated beverages. Remove wet clothing promptly. Take breaks in warm areas. Reduce work periods as necessary. Layer work clothing. |
| | Poison ivy/oak/sumac | <ul style="list-style-type: none"> Avoid plant areas if possible. Wear long sleeves and long pants. Promptly wash clothing that has contacted poisonous plants. Wash affected areas immediately with soap and water. |
| | Heat rash | <ul style="list-style-type: none"> Keep the skin clean and dry. Change perspiration-soaked clothing, as necessary. Bathe at end of work shift or day. Apply powder to affected area. |
| | Heat cramps | <ul style="list-style-type: none"> Drink plenty of cool fluids even when not thirsty. Provide cool fluid for work crews. Move victim to shaded, cool area. |
| | Heat exhaustion | <ul style="list-style-type: none"> Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature). Set up work/rest periods. Use the "buddy system." Allow workers time to acclimate. Have ice packs available for use. Take frequent breaks. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|---|--|--|
| Initial UXO avoidance sweep and equipment staging (continued) | Heat stroke | <ul style="list-style-type: none">• Evaluate possibility of night work.• Perform physiological monitoring on workers during breaks.• Wear body cooling devices. |
| | Contact with moving equipment/vehicles | <ul style="list-style-type: none">• Work area will be barricaded/demarcated.• Equipment will be laid out in an area free of traffic flow.• Barricades shall be used on or around work areas when it is necessary to prevent the inadvertent intrusion of pedestrian traffic.• Barriers shall be used to protect workers from vehicular traffic.• Barriers shall be used to guard excavations adjacent to streets or roadways.• Flagging shall be used for the short term (less than 24 hours) to identify hazards until proper barricades or barriers are provided.• Heavy equipment shall have backup alarms. |
| | Forklift operations | <ul style="list-style-type: none">• Use qualified and trained forklift operators.• The operator shall not exceed the load capacity rating for the forklift.• The load capacity shall be clearly visible on the forklift.• Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement. |
| | Portable electric tools | <ul style="list-style-type: none">• Portable electric tools that are unsafe due to faulty plugs, damaged cords, or other reasons, shall be tagged (do not use) and removed from service.• Portable electric tools and all cord and plug connected equipment shall be protected by a ground-fault circuit interrupter (GFCI) device.• Electrical tools shall be inspected daily prior to use. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

(Page 4 of 14)

| Activity | Potential Hazards | Recommended Controls |
|---|------------------------------|---|
| Initial UXO avoidance sweep and equipment staging (continued) | Extension cords | <ul style="list-style-type: none">• Extension cords that have faulty plugs, damaged insulation, or are unsafe in any way shall be removed from service.• Cords shall be protected from damage from sharp edges, projections, pinch points (doorways), and vehicular traffic.• Cords shall be suspended with a nonconductive support (rope, plastic ties, etc.).• Cords shall be designed for hard duty.• Cords shall be inspected daily. |
| | Lightning strikes | <ul style="list-style-type: none">• Whenever possible, halt activities and take cover.• If outdoors, stay low to the ground.• Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground).• Seek shelter in a building if possible.• Stay away from windows.• If available, crouch under a group of trees instead of one.• Keep all body parts in contact with the ground as close as possible.• Remain 6 feet away from tree trunk if seeking shelter beneath tree(s).• If in a group, keep 6 feet of distance between people. |
| | Thunderstorms, tornados | <ul style="list-style-type: none">• Listen to radio or TV announcements for pending weather information.• Cease field activities during thunderstorm or tornado warnings.• Seek shelter. Do not try to outrun a tornado. |
| Surveying | Slip, trip, and fall hazards | <ul style="list-style-type: none">• Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe boots when working in the field.• Provide adequate lighting in all work areas.• Whenever possible, avoid routing cords and hoses across walking pathways.• Flag or cover inconspicuous holes to protect against falls.• Work areas will be kept clean and orderly.• Garbage and trash will be disposed of daily in approved refuse containers.• Tools and accessories will be properly maintained and stored.• Work areas and floors will be kept free of dirt, grease, and slippery materials. |

Table 5-1

Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

(Page 5 of 14)

| Activity | Potential Hazards | Recommended Controls |
|-----------------------|----------------------|---|
| Surveying (continued) | Traffic accidents | <ul style="list-style-type: none">• Place physical barrier (i.e., barricades, fencing) around work areas regularly occupied by pedestrians.• If working adjacent to roadways, have workers wear fluorescent orange vests.• Use warning signs or lights to alert oncoming traffic.• Assign flag person(s) if necessary to direct local traffic.• Set up temporary parking locations outside the immediate work area.• Motor vehicle operators shall obey all posted traffic signs, signals, and speed limits.• Pedestrians have the right-of-way.• Wear seat belts when vehicles are in motion. |
| | Wildlife hazards | <ul style="list-style-type: none">• Workers should be cautious when driving through the site in order to avoid encounters with passing animals. |
| | Biological hazards | <ul style="list-style-type: none">• Walking through overgrown grass areas, watch for snakes (rattlesnakes, moccasins, copperheads). |
| | Ticks | <ul style="list-style-type: none">• Wear light colored clothing (can see ticks better).• Mow vegetated and small brush areas.• Wear insect repellant.• Wear long sleeves and long pants.• Visually check oneself promptly and frequently after exiting the work area. |
| | Poison ivy/oak/sumac | <ul style="list-style-type: none">• Avoid plant areas if possible.• Wear long sleeves and long pants.• Promptly wash clothing that has contacted poisonous plants.• Wash affected areas immediately with soap and water. |
| | UXO | <ul style="list-style-type: none">• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.• If UXO is encountered, cease all activities, mark the location, and notify the site manager. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|----------------------|---|---|
| Groundwater Sampling | Cross-contamination and contact with potentially contaminated materials | <ul style="list-style-type: none"> • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Avoid skin contact with water. • Handle samples with care. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations. |
| | Cut hazards | <ul style="list-style-type: none"> • Use care when handling glassware. • Wear adequate hand protection. |
| | Hazard communication | <ul style="list-style-type: none"> • MSDSs shall be obtained for chemicals brought on site. • Label all containers as to contents. |
| | Strains/sprains | <ul style="list-style-type: none"> • Use the proper tool for the job being performed. • Get assistance if needed. • Avoid twisting/turning while pulling on tools, moving equipment, etc. |
| | Spills/residual materials | <ul style="list-style-type: none"> • Absorbent material and containers will be kept available where leaks or spills may occur. |
| | Lighting | <ul style="list-style-type: none"> • Adequate lighting will be provided to ensure a safe working environment. |
| | Unattended worker | <ul style="list-style-type: none"> • Use "buddy system" - visual contact will be maintained with the sampling technician during sampling activities. |

Table 5-1

Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

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| Activity | Potential Hazards | Recommended Controls |
|---|---|--|
| Soil Boring and Surface/Subsurface Sampling | Cross-contamination and contact with potentially contaminated materials | <ul style="list-style-type: none">• Stop immediately at any sign of obstruction.• Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination.• Only essential personnel will be in the work area.• Real-time air monitoring will take place before and during sampling activities.• All personnel will follow good hygiene practices.• Proper decontamination procedures will be followed.• All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations. |
| | Cut hazards | <ul style="list-style-type: none">• Use care when handling glassware.• Wear adequate hand protection. |
| | Slip, trip, and fall hazards | <ul style="list-style-type: none">• Site workers will be required to wear hard hat, safety glasses with side shields, work gloves, and steel-toe/shank boots when working in the field.• Whenever possible, avoid routing cords and hoses across walking pathways.• Flag or cover inconspicuous holes to protect against falls. |
| | Bees, spiders, and snakes | <ul style="list-style-type: none">• Workers shall inspect the work area carefully and avoid placing hands and feet into concealed areas.• Evaluate need for sensitive workers to have prescribed antibiotic or medicine to combat onset of symptoms. |
| | Poison ivy/oak/sumac | <ul style="list-style-type: none">• Avoid plant areas if possible.• Wear long sleeves and long pants.• Promptly wash clothing that has contacted poisonous plants.• Wash affected areas immediately with soap and water. |
| | Cold stress | <ul style="list-style-type: none">• Workers should wear insulated clothing when temperatures drop below 40°F.• Drink warm beverages on breaks. Refrain from drinking caffeinated beverages.• Remove wet clothing promptly.• Take breaks in warm areas.• Reduce work periods as necessary.• Layer work clothing. |

Table 5-1

Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama

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| Activity | Potential Hazards | Recommended Controls |
|---|-----------------------|---|
| Soil Boring and Surface/Subsurface Sampling (continued) | Access/egress hazards | <ul style="list-style-type: none">• Use qualified and trained bushhog operator.• Keep employees out of the bushhog work area.• Utilize good housekeeping practices.• Keep aisleways, pathways, and work areas free of obstruction.• Clean ice or snow off of walkways or work stations.• Use appropriate footwear for the task assigned. |
| | Heat rash | <ul style="list-style-type: none">• Keep the skin clean and dry.• Change perspiration-soaked clothing, as necessary.• Bathe at end of work shift or day.• Apply powder to affected area. |
| | Heat cramps | <ul style="list-style-type: none">• Drink plenty of cool fluids even when not thirsty.• Provide cool fluid for work crews.• Move victim to shaded, cool area. |
| | Heat exhaustion | <ul style="list-style-type: none">• Conduct physiological worker monitoring as needed (i.e., heart rate, oral temperature).• Set up work/rest periods.• Use the buddy system.• Allow workers time to acclimate.• Have ice packs available for use.• Take frequent breaks. |
| | Heat stroke | <ul style="list-style-type: none">• Evaluate possibility of night work.• Perform physiological monitoring on workers during breaks.• Wear body cooling devices. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|---|--|---|
| Soil Boring and Surface/Subsurface Sampling (continued) | Lightning strikes | <ul style="list-style-type: none"> • Whenever possible, halt activities and take cover. • If outdoors, stay low to the ground. • Limit the body surface area that is in contact with the ground (i.e., kneeling on one knee is better than laying on the ground). • Seek shelter in a building if possible. • Stay away from windows. • If available, crouch under a group of trees instead of one single tree. • Keep all body parts in contact with the ground as close as possible. • If in a group, keep 6 feet of distance between people. |
| | UXO | <ul style="list-style-type: none"> • UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities. • If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist. |
| | Accidental exposure to chemical agents | <ul style="list-style-type: none"> • Low-level real-time environmental monitoring will be performed by Huntsville Corps of Engineers Technical/Escort Unit. • Modified Level D personal protective equipment (PPE) will be required. During the first 15 feet depth of each monitoring well installation activity, downhole geophysics will be performed. • Engineering controls will be used as appropriate. • Personnel will be equipped with an emergency escape/egress air supply pack. |
| Moving and Shipping Collected Samples | Heavy lifting | <ul style="list-style-type: none"> • Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift. |
| | Pinch points | <ul style="list-style-type: none"> • Keep hands, fingers, and feet clear of moving/suspended materials and equipment. • Beware of contact points. • Stay alert at all times! |
| | Cut hazards | <ul style="list-style-type: none"> • Wear adequate hand protection. Use care when handling glassware. |
| | Hazard communication | <ul style="list-style-type: none"> • Label all containers as to contents and associated hazards. |
| | Heavy lifting | <ul style="list-style-type: none"> • Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|--|---|--|
| Material Storage | Flammable and combustible liquids | <ul style="list-style-type: none"> • Store in NO SMOKING AREA. • Fire extinguisher readily available. • Transfer only when properly grounded and bonded. |
| Disposal of Investigation-Derived Waste (IDW) (Forklift Operation) | Personnel injury, property damage, and/or equipment damage | <ul style="list-style-type: none"> • Use qualified and trained forklift operators. • The operator shall not exceed the load capacity rating for the forklift. • The load capacity shall be clearly visible on the forklift. • Forklift operators shall inform their supervisor of any prescribed medication that they are taking that would impair their judgement. |
| | Cross-contamination and contact with potentially contaminated materials | <ul style="list-style-type: none"> • Stop immediately at any sign of obstruction. • Sampling technicians will wear proper protective clothing and equipment to safeguard against potential contamination. • Only essential personnel will be in the work area. • Real-time air monitoring will take place before and during sampling activities. • All personnel will follow good hygiene practices. • Proper decontamination procedures will be followed. • All liquids and materials used for decontamination will be contained and disposed of in accordance with federal, state, and local regulations. |
| | Cut hazards | <ul style="list-style-type: none"> • Use care when handling glassware. • Wear adequate hand protection. |
| High-Pressure Water Jetting Operations | Heavy lifting | <ul style="list-style-type: none"> • Use proper lifting techniques. • Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift. |
| | Slip, trip, and fall hazards | <ul style="list-style-type: none"> • Good housekeeping shall be implemented. • The work area shall be kept clean as feasible. • Inspect the work area for slip, trip, and fall hazards. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|--|-----------------------------|--|
| High-Pressure Water Jetting Operations (continued) | Fueling | <ul style="list-style-type: none"> Only approved safety cans shall be used to store fuel. Do not refuel equipment while it is operating. Fire extinguishers shall be suitably placed, distinctly marked, readily accessible, and maintained in a fully charged and operable condition. |
| | Faulty or damaged equipment | <ul style="list-style-type: none"> Equipment shall be inspected before being placed into service and at the beginning of each shift. Preventive maintenance procedures recommended by the manufacturer shall be followed. A lockout/tagout procedure shall be used for equipment found to be faulty or undergoing maintenance. |
| | High-pressure water | <ul style="list-style-type: none"> Jetting gun operator must wear appropriate PPE including hard hat, impact-resistant safety glasses with side shields, water-resistant clothing, metatarsal guards for feet and legs, and hearing protection (if appropriate). One standby person shall be available within the vicinity of the pump during jetting operation. The work area shall be isolated and adequate barriers will be used to warn other site personnel. |
| | Unqualified operators | <ul style="list-style-type: none"> Only qualified and trained personnel are permitted to operate machinery and mechanized equipment associated with water jet cutting and cleaning. |
| | Out of control equipment | <ul style="list-style-type: none"> No machinery or equipment is permitted to run unattended. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded. |
| | Noise | <ul style="list-style-type: none"> Sound levels above 85 dBA mandates hearing protection by nearby site personnel. |
| | Activation during repairs | <ul style="list-style-type: none"> All machinery or equipment will be shut down and positive means taken to prevent its operation while repairs or manual lubrications are being done. |
| | Pinch points | <ul style="list-style-type: none"> Keep feet and hands clear of moving/suspended materials and equipment. Stay alert and clear of materials suspended. |
| | Falling objects | <ul style="list-style-type: none"> Hard hats are required by site personnel. Stay alert and clear of material suspended overhead. |
| | Flying debris | <ul style="list-style-type: none"> Impact-resistant safety glasses with side shields are required. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|--|--|---|
| High-Pressure Water Jetting Operations (continued) | Contact with potentially contaminated materials | <ul style="list-style-type: none"> All site personnel will wear the appropriate PPE. |
| Drilling and Installation of Monitoring Wells | Overhead hazards | <ul style="list-style-type: none"> Make sure no obstacles are within radius of boom. Always stay a safe distance from power lines. |
| | Faulty or damaged equipment being utilized to perform work | <ul style="list-style-type: none"> All machinery or mechanized equipment will be inspected by a competent mechanic and be certified to be in safe operating condition. Equipment will be inspected before being put to use and at the beginning of each shift. Faulty/unsafe equipment will be tagged and if possible locked out. Drill rigs shall be equipped with reverse signal alarm, backup warning lights, or the vehicle is backed up only when an observer signals it is safe to do so. |
| | Uneven terrain, poor ground support, inadequate clearances, contact with utilities | <ul style="list-style-type: none"> Inspections or determinations of road conditions and structures shall be made in advance to ensure that clearances and load capacities are safe for the passage or placing of any machinery or equipment. All mobile equipment and areas in which they are operated shall be adequately illuminated. Aboveground and belowground utilities will be located prior to staging equipment. Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines will have the wheels chocked. Inspect brakes and tire pressure on drill rig before staging for work. |
| | Inexperienced operator | <ul style="list-style-type: none"> Machinery and mechanized equipment shall be operated only by designated personnel. Operators shall inform their supervisor(s) of any prescribed medication that they are taking that would impair their judgment. |
| | Jacks/outriggers | <ul style="list-style-type: none"> Ensure proper footing and cribbing. |
| | Falling objects | <ul style="list-style-type: none"> Remove unsecured tools and materials before raising or lowering the derrick. Stay alert and clear of materials suspended overhead. |
| | Pinch points | <ul style="list-style-type: none"> Keep feet and hands clear of moving/suspended materials and equipment. Stay alert at all times! |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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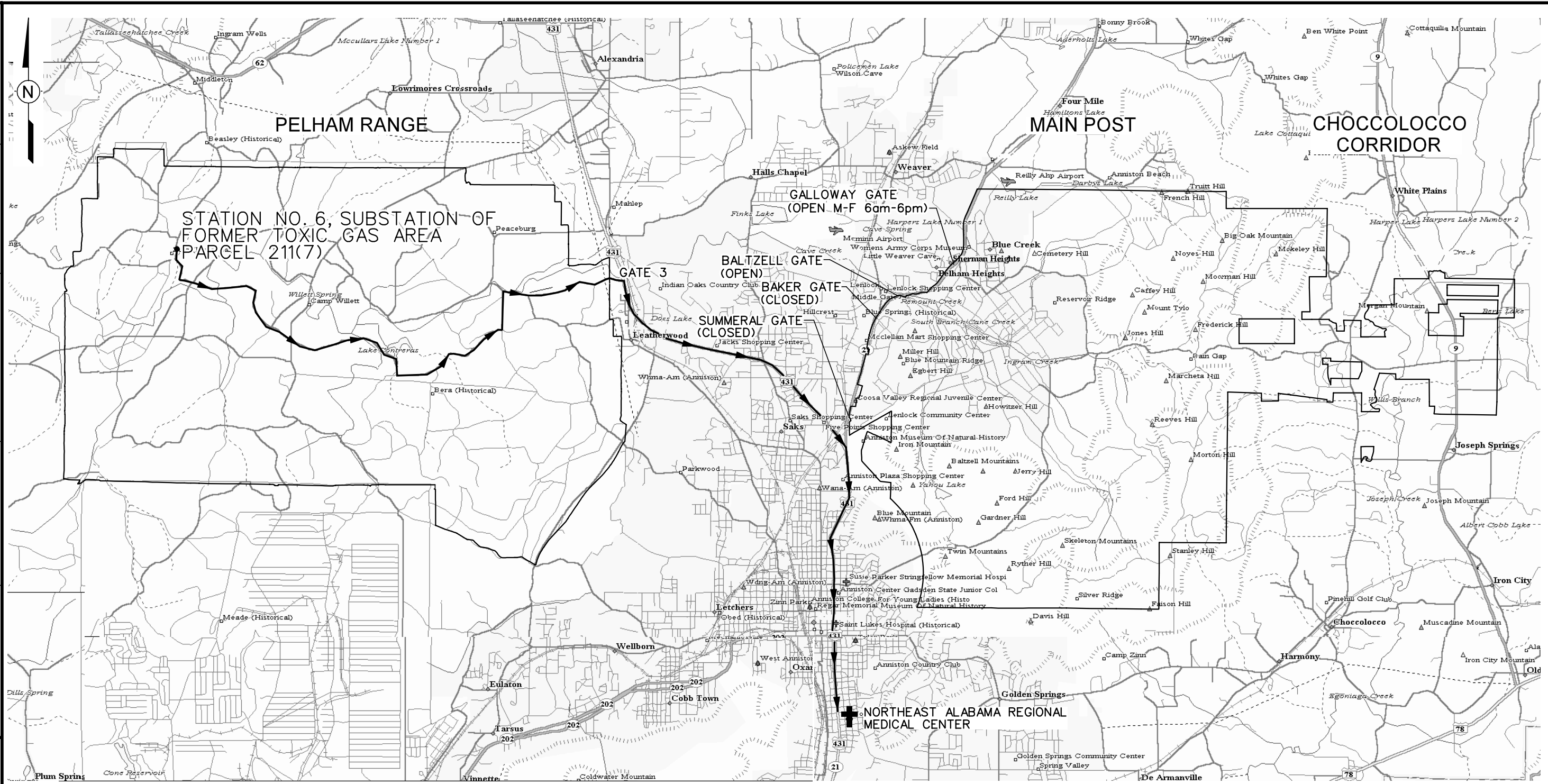
| Activity | Potential Hazards | Recommended Controls |
|---|--|---|
| Drilling and Installation of Monitoring Wells (continued) | Fire | <ul style="list-style-type: none"> Mechanized equipment shall be shut down prior to and during fueling operations. Have fire extinguishers inspected and readily available. |
| | Fall hazards | <ul style="list-style-type: none"> Personnel are not allowed to work off of machinery or use them as ladders. Use fall protection when working above 6 feet. |
| | Contact with rotating or reciprocating machine parts | <ul style="list-style-type: none"> Use machine guards; use long-handled shovels to remove auger cuttings. Safe lockout procedures for maintenance work. |
| | Heavy lifting | <ul style="list-style-type: none"> Use proper lifting techniques. Lifts greater than 60 pounds require assistance or mechanical equipment; size up the lift. |
| | Slip, trip, and fall hazards | <ul style="list-style-type: none"> Practice good housekeeping, keep work area picked up and clean as feasible. Continually inspect the work area for slip, trip, and fall hazards. |
| | Contact with potentially contaminated materials | <ul style="list-style-type: none"> Real-time air monitoring will take place. If necessary, proper personal protective clothing and equipment will be utilized. Stop immediately at any sign of obstruction. Do not breathe air surrounding the boring unless necessary. Upgrade to respirator if necessary. Avoid skin contact with soil cuttings. Wear gloves. Stay clear of moving parts of drill rig. |
| | Drum handling | <ul style="list-style-type: none"> Be careful not to breathe air from around open drum any more than necessary. Monitor with photoionization detector/flame ionization detector (PID/FID) equipment and upgrade to respirator if necessary. When filling a drum (with either soil or water), be careful not to make contact with the contained waste. Wear appropriate gloves. Make sure lid or bung of drum is secure. If moving a drum unassisted, be sure to leverage properly, use proper lifting techniques, and wear safety glasses and steel-toed boots. When using a drum dolly, make sure straps and lid catch are securely attached. Leverage properly when tilting drum. Be sure toes stay away from drum. |

Table 5-1

**Activity Hazard Analysis
Station No. 6, Subsection of Former Toxic Gas Area, Pelham Range, Parcel 211(7)
Fort McClellan, Calhoun County, Alabama**

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| Activity | Potential Hazards | Recommended Controls |
|---|-------------------|--|
| Drilling and Installation of Monitoring Wells (continued) | UXO | <ul style="list-style-type: none">• UXO avoidance monitoring will be conducted by a UXO specialist prior to beginning activities.• UXO avoidance monitoring shall apply to all intrusive activities associated with well construction completion.• If UXO is encountered, cease all activities, mark the location, and notify the site manager and UXO specialist immediately. |



ATTACHMENT 1

PELHAM RANGE EMERGENCY ROUTE AND RANGE CONTROL CONTACT

Pelham Range Emergency Routes

- Range Control will determine depending on the wind direction the best egress route.
- Range Control will advise over the radio which route to take.
- 4 routes have been indicated on the enclosed map.

Medical Emergency

- Exit gate Number 3 at Pelham Range,
- Turn right onto Route 431,
- Turn right onto Highway 21 (Quintard),
- Turn left onto 10th Street,
- Hospital is 1-1/2 blocks ahead,
 - Northeast Alabama Regional Medical Center
 - 400 East 10th Street
 - Anniston, Alabama

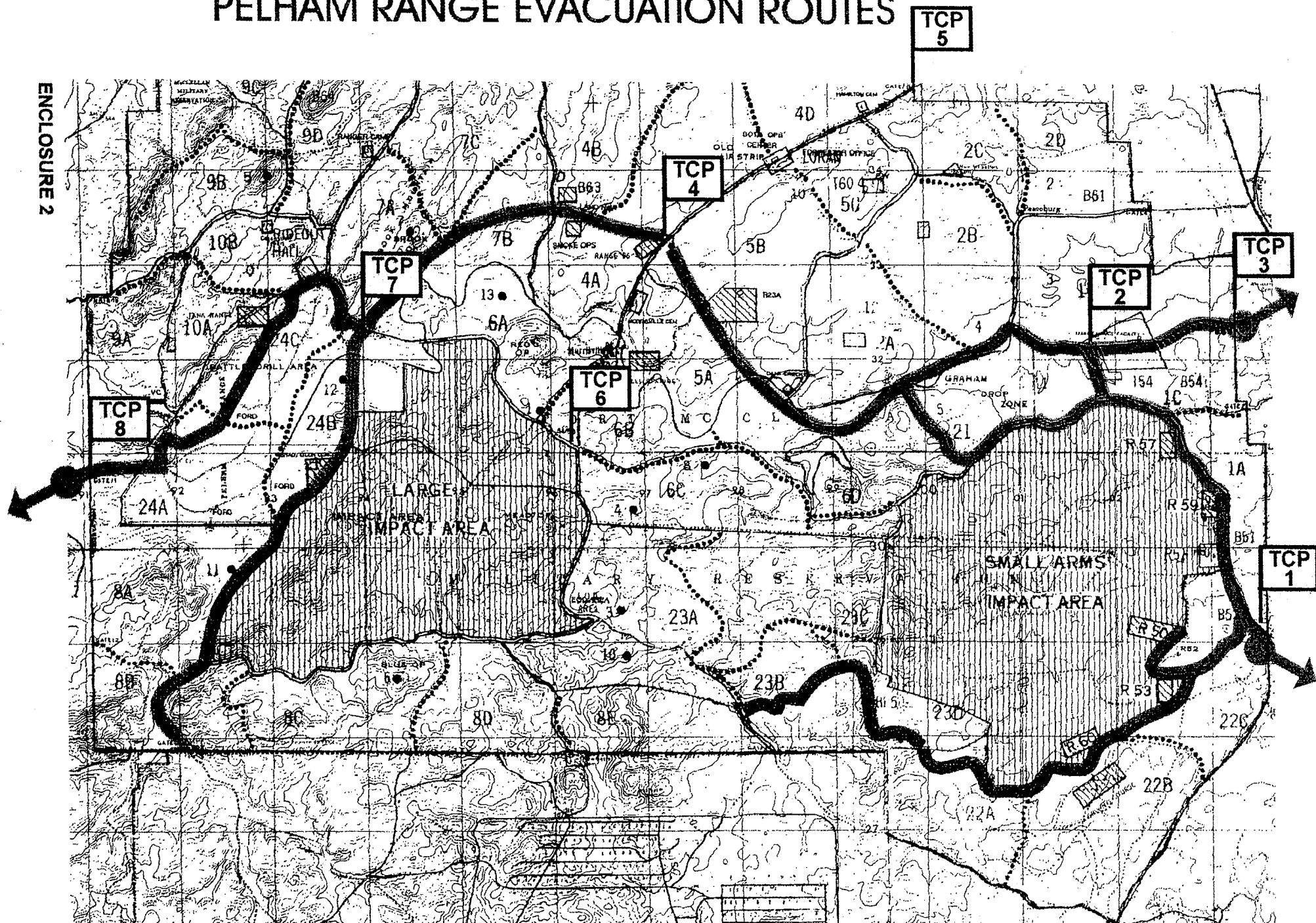
Range Control- Pelham Range

- Building 1120, Ft McClellan
Phone No. 848-6772
Fax No. 848-4412

All access permits are issued by range control, daily.

PELHAM RANGE EVACUATION ROUTES

ENCLOSURE 2



ATTACHMENT 2

EVALUATING OE/UXO/CWM HAZARDS IN SUPPORT OF HTRW ACTIVITIES FORM

Site Name: Station 6, Subsection of Former Toxic Gas Area, Parcel 211(7)

Job Number: 774645.27010200

Date: 13-Sep-01

Name of person completing form: Jason Brown

Title: Scientist

Signature: 

1a. Have the historical records available for this HTRW site been reviewed? Yes ☒ No ☐

If the answer to 1a. is yes, proceed to 1b.

If the answer to 1a. is no, review site information prior to completing this form.

1b. Is there recent information (site walk, worker interviews, etc.) that indicates a potential OE/CWM hazard at this site? Yes ☒ No ☐

Proceed to 2.

2. According to the records review, is this site known or suspected to have been used for:

| | Yes | No |
|---|--------------------------|-------------------------------------|
| 2a. Manufacturing, production, or shipping of conventional or chemical warfare materiel (CWM) OE: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Live fire testing of any ordnance: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Conventional or CWM OE training: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Storage of conventional or CWM OE: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Disposal or demilitarization of conventional or CWM OE: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other (specify): | | |

| | Yes | No |
|---|-------------------------------------|-------------------------------------|
| 2b. Manufacturing, production, or shipping of chemical agent: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Research or testing of chemical agent: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Chemical agent related training: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Storage of chemical agent: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Disposal or demilitarization of chemical agent: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Other (specify): | | |

Any 2a question answered "YES" indicates UXO support is required for all site activities. If all 2a questions are answered "NO", UXO support may not be required. Refer to Installation-Wide Safety and Health Plan (SHP) for additional information concerning UXO support. Proceed to question 2b.

Any 2b question answered "YES" requires the remainder of this form to be completed. If all 2b questions are answered "NO", real-time monitoring for chemical agent will not be required and completing the remainder of this form is not required. Refer to SHP for additional information concerning agent monitoring.

Additional space for notes and explanations on page 4.

Continue to page 2 of 4 –

Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities

Page 2 of 4

Site Name:

Job Number:

Date:

| 3. For sites where the manufacturing, testing, storage, or disposal of CWM is suspected: | Yes | No |
|--|-------------------------------------|-------------------------------------|
| Is there evidence that the CWM is/was containerized in potentially unexploded ordnance: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Is there evidence that the CWM is/was containerized in nonexplosive containers: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Is there evidence that the CWM is open to the environment (i.e., in an open container or free liquid/solid in the soil/water): | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Is there evidence that the CWM hazard has been removed from the site or that the site has been decontaminated: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Has the site been previously monitored or sampled for chemical agent or agent breakdown products: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| For any "YES" above, was the agent or breakdown product identified? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

For any "Yes", list types of agent (mustard, lewisite, etc.) and the form (in ordnance, in drum, etc.) the CWM is expected to be found (or state "unknown"):

Mustard with possible decontaminants (STB, DANC, DS2). No quantitative proof of current condition of suspected contaminants.

List agent breakdown products identified:

N/A

| 4. Defining the Potential for the Presence of CWM: | Agent Monitoring Requirements for Site Activities: |
|---|---|
| 4a. High Presence Potential – Definition: CWM is known or highly suspected to be present at the site in a condition (within ordnance and/or nonexplosive container, or in an uncontainerized form in sufficient volume that weathering of the product has not rendered it harmless) that will cause potential harm to personnel if it is encountered. | Mandatory personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP). |
| 4b. Moderate Presence Potential - Definition: CWM is suspected to have been present at the site, but has been previously removed and/or decontaminated, or has been open to the environment such that it is expected to have degraded and been rendered harmless. | The need for personal and perimeter air monitoring using the DAAMS, MINICAMS, and RTAP collection/analysis methods with off-site surety laboratory confirmation of all environmental samples will be reviewed on a site-by-site basis. Specific monitoring criteria (equipment types and sampling station placement, percentage of personnel monitored, etc.) to be established in the Site Specific Safety and Health Plan (SSHP). |
| 4c. Low Presence Potential – Definition: No indications that CWM will be present in quantity or reactivity (in munitions, projectiles, drums, etc.). | No specific personal or area monitoring for chemical agents required beyond what is specified in the SHP. |

Continue to page 3 of 4 -

Evaluating OE/UXO/CWM Hazards in Support of HTRW Activities

Page 3 of 4

Site Name: Station 6, Subsection of Former Toxic Gas Area, Parcel 211(7)

Job Number: 774645.27010200

Date: 13-Sep-01

Based on the information available for this site, including information gathered during completion of this form, the potential for CWM to be present at this site, as defined above, is expected to be: **MODERATE**

Exceptions/Explanations:

(additional space for notes and explanations on page 4)

5. Based on the information provided in questions 1 through 5, above, the following guidelines will be used for establishing PPE requirements for activities to be performed at this site; Specific details are provided in the SSHP:

5a. High Exposure Potential - High exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).

Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "High Exposure Potential" will be Level B (supplied air) or Level C (full-face respirator with HEPA/Acid Gas/OV cartridges w/ emergency egress hood) and chemically resistant coveralls. Specific PPE requirements are in the SSHP for this site.

5b. Moderate Exposure Potential - Moderate exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).

Subject to review by the IT CIH, PPE for all personnel in the exclusion zone at a site identified as having a "Moderate Exposure Potential" will be Modified Level D (disposable coveralls and emergency egress hood) carried by all personnel. Specific PPE requirements are in the SSHP for this site.

5c. Low Exposure Potential - Low exposure potential is determined by evaluating the potential presence of CWM in conjunction with the task(s) to be performed, as well as the specific location and duration of the task(s).

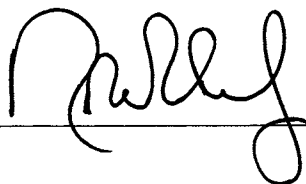
Subject to review by the IT CIH, no additional PPE requirements above those stated in the SSHP are needed for sites identified as having "Low Exposure Potential." Specific PPE requirements are in the SSHP for this site.

Based on all available information, the exposure potential at this site is considered to be: **MODERATE**

Exceptions/Explanations:

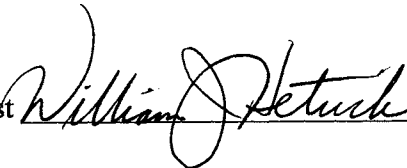
Review Signatures:

IT UXO Technical Manager



Date: 13 SEP 01

IT H&S Specialist



Date: 12/11/01

Site Name: Station 6, Subsection of Former Toxic Gas Area, Parcel 211(7)

Job Number: 774645

Date: 13-Sep-01

Additional Notes and Explanations:

Station 6 is a subsection of the Former Toxic Gas Area, Parcel 211(7), at Pelham Range. Station 6 was one of seven training stations in a former training area, the Chemical Obstacle Course. The Chemical Obstacle Course is documented as being located in the northwest portion of Training Area 10B at Pelham Range, falling within the parcel boundary of Former Toxic Gas Area, Parcel 211(7) (Figure 1-1 and Figure 1-2). A 1955 Chemical Corps School Lesson Plan contains a description and a figure of the Chemical Obstacle Course. The Chemical Obstacle Course was used from approximately 1955-1963 (CHPPM, 1999).

Station 6 activities are described in the Chemical Corps School Lesson Plan as a training area for mines containing molasses residue, and surface soil contamination scenarios by placing mustard on the ground. The Chemical Corps School Lesson Plan also describes a shufflebox or pit containing dry mix (decontaminant) located at the far edge of the area for the decontamination of shoes (CHPPM, 1999).

A survey conducted by the U.S. Army Chemical School in 1967 declared the Chemical Obstacle Course area free of contamination. All empty rounds, containers, and miscellaneous items were policed and disposed of in accordance with standard operating procedures (not specified). The area was bulldozed and decontaminated. Based on existing information, the report concluded there appeared to be no significant risk or surface activity (CHPPM, 1999).

The location of the Station 6 and the Chemical Obstacle course was unknown when the 1967 survey was performed and the area was declared free of contamination. It is believed that the shufflebox or pit of an unknown decontaminant was bulldozed (CHPPM, 1999).

The chemical agent mustard was reportedly used as well as decontaminants at Station 6. Below is a list of the decontaminants that were probably used at Station 6:

- ☐ Decontamination agent (non-corrosive) (DANC)
- ☐ Decontamination Solution Number 2 (DS2)
- ☐ Supertropical bleach (STB)